

447.01	Introduction
447.02	Applicable Statutes and Regulations
447.03	Policy Guidance
447.04	MOUs, MOAs, IAs
447.05	Technical Guidance
447.06	Permits and Approvals
447.07	Non-Road Requirements
447.08	Exhibits

Key to Icons



Web site.*



Memorandum of understanding, memorandum of agreement, or interagency agreement.



Reference document, such as a manual, book, or published article.



Permit or application for a permit, approval or certification.

447.01 Introduction

This section contains policies and procedures for dealing with hazardous or problem materials encountered or potentially encountered in property WSDOT owns, manages, plans to sell, or plans to purchase. See [Section 510](#) and [Section 520](#) for procedures related to using, storing, and transporting hazardous materials or cleaning up hazardous materials spilled during construction or maintenance. Stringent federal and state environmental laws and regulations expose WSDOT to full responsibility for cleanup and proper disposal of hazardous materials, whether the original source is from WSDOT activities, from a tenant, or inherited when property is acquired. WSDOT has assumed a leading role in dealing with hazardous materials associated with transportation project development. The extraordinary costs incurred with liability for hazardous materials make it imperative that WSDOT aggressively seek to reduce exposure to liability.

Identifying hazardous materials early in the project development process has many advantages:

- Provides increased safety by minimizing potential dangers to WSDOT other personnel and the environment arising from exposure to and release of hazardous chemicals.
- Reduces the likelihood of project redesign, delay, or termination and attendant costs.
- Reduces the possibility and costs of litigation against WSDOT during both design and construction.
- Avoids the adverse publicity associated with owners of contaminated property.

WSDOT practice is to conduct thorough, legally defensible investigations for identifying potentially contaminated property; develop and maintain good document files; and conduct all appropriate inquiry as early in the project development process as possible. It is essential that the extent and risk of liability be identified before property acquisition. [Table 447-1](#) summarizes actions to minimize liability throughout the process.

* Web sites and navigation referenced in this section are subject to change. For the most current links, please refer to the online version of the EPM, available through the ESO home page: <http://www.wsdot.wa.gov/environment/default.htm>

(1) **Summary of Requirements**

Exhibit 447-1 illustrates the process of hazardous materials discovery, investigation, and reporting during each stage of the project – from planning to project definition, development, construction, maintenance, and surplus property disposal. This section describes requirements during project development and refers to other parts of this manual for detail on other phases.

Two parallel and overlapping processes are described: (1) environmental documentation (discipline studies in support of an EIS or EA), and (2) hazardous materials investigations, which may be done independently or in support of environmental documentation. Hazardous materials investigations should be done at a corridor level, beginning with Geographic Information System (GIS) screening at the planning stage, and/or at a site-specific level. Site-specific investigations should be conducted to progressively greater levels of detail in an Initial Site Assessment (ISA), Preliminary Site Investigation (PSI), and Detailed Site Investigation (DSI).

Hazardous materials investigations should be done prior to property acquisition, for property management of potentially contaminated sites, and to characterize contaminated media prior to construction (see **Section 510.09**). WSDOT general practice is to avoid property with hazardous materials potential. When acquiring such property is not avoidable, site assessments, investigations, and remediation shall be conducted in a manner that creates the least potential for WSDOT liability.

Table 447-1:
Important Phases in the Highway Project Development Process
Where Liability May be Minimized

Phase	Recommended Procedures	Options if Problems Identified
Project Planning (See Part 2)	Screening for major hazardous materials issues such as Superfund sites.	Design around contaminated property. Secure cleanup by current owner prior to purchase Negotiate performance bonds, indemnifications, etc., to ensure property owner financial responsibility.
Project Definition (See Part 3)	Environmental Review Summary identifies possible presence of hazardous materials.	Same as above.
Initial Design / Location / Environmental Studies (Sec. 447.05)	Conduct Initial Site Assessment. Conduct Preliminary Site Assessment.	Delay project until site is cleaned up by the responsible parties. Proceed to design, incorporating avoidance or necessary WSDOT cleanup actions. Identify other liable parties for their input on cleanups
Project Design (Sec. 447.05)	Evaluate feasibility of alternative concepts.	Revise location decision/terminate project. Proceed to design, incorporating avoidance or necessary WSDOT cleanup actions. Delay project until site is cleaned up by the responsible parties. Proceed to ROW appraisal and acquisition.
ROW Appraisal and Acquisition (Sec. 447.05)	Conduct detailed hazardous materials site investigation. Include special provisions in purchase agreements.	Revise location decision/terminate project. Negotiate performance bonds, indemnifications, etc., to ensure property owner financial responsibility. Delay project until site is cleaned up by the responsible parties. Cleanup by highway agency after acquisition.
Construction (see Sec. 510)	Establish hazardous materials procedures for construction contractors. Implement notification procedures. Require the SPCC Plan.	Revise location decision/terminate project. Delay project until site is cleaned up by the responsible parties. Cleanup by highway agency.
Property Management (see Sec 530)	Conduct hazardous materials audits of all excess property. Negotiate protective leases.	Delay maintenance or other activity until site is cleaned up by responsible parties. Cleanup by highway agency.

(2) Abbreviations and Acronyms

Abbreviations and acronyms used in this section are listed below. Others are found in the general list in the appendix.

ASTM	American Society for Testing and Materials
CAA	Clean Air Act, 42 USC Section 7901
CERCLA	Comprehensive Environmental Response, Compensation; and Liability Act. 42, USC Section 9601.
CHWCP	Construction Hazardous Waste Contingency Plan
CW	Contaminated Waste
CWA	Clean Water Act, 33 USC Section 1251
DSI	Detailed Site Investigation
DWR	Dangerous Waste Regulations
GIS	Geographic Information Systems
HMTA	The Hazardous Material Transport Act, 49 USC Section 1803
HSWA	Hazardous and Solid Waste Amendments, 42 USC Sections 268, 280, 3001
ISA	Initial Site Assessment
L&I	Washington Department of Labor and Industries
LUST	Leaking Underground Storage Tank
MTCA	Model Toxics Control Act
NPL	National Priority List
OSHA	The Occupational Safety and Health Act, 29 USC Sections 651–678
PCB	Polychlorinated biphenyls
PCS	Petroleum Contaminated Soil
PRP	Potentially Responsible Party (or Person)
POTW	Publicly Owned Treatment Works
PSI	Preliminary Site Investigation
RCRA	Resource Conservation and Recovery Act, 42 USC Section 6901, 40 CFR 260-281
RES	Real Estate Services
SARA	Superfund Amendments and Reauthorization Act, 42 USC Section 9601-9651
SDWA	Safe Drinking Water Act, 42 USC Section 30
SPCC	Spill Prevention, Control, and Countermeasures
TSCA	Toxics Substances Control Act, 15 USC Section 2601-2629
TSD	Transfer, treatment, storage or disposal – types of hazardous waste facilities
UST	Underground Storage Tank

WAD	EPA/Washington State identification number for wastes regulated under the Dangerous Waste Regulations
WP	Waste Profile

(3) **Glossary**

Dangerous Waste – Solid waste designated as dangerous, or extremely hazardous or mixed waste in Washington’s Dangerous Waste Regulations (WAC 173-303). Under RCRA, solid waste may (a) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed (listed in RCRA, 40 CFR 261). Dangerous wastes, not necessarily listed under 40 CFR 261, are characteristically reactive, corrosive, toxic, or ignitable. Radioactive substances are excluded from RCRA regulation.

Hazardous Materials – In general, any material which poses harmful risks to human health and/or the environment. Includes any hazardous or toxic substance, pollutant, or chemical regulated under the CAA, CWA, TSCA, and/or RCRA, excluding petroleum (CERCLA Sec. 101(14)); a pollutant or contaminant as any substance likely to cause death, disease, abnormalities, etc. (CERCLA Sec. 101(33)). Listed in 40 CFR 302.

Hazardous Waste – Solid wastes designated by 40 CFR Part 261, and regulated as hazardous and/ or mixed waste by the USEPA according to Washington’s Dangerous Waste Regulations (WAC 173-303). Hazardous wastes defined under RCRA are included as a subset of hazardous materials defined under CERCLA.

Solid Waste – Under RCRA Sec. 1004(27), any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. Excludes solid or dissolved material in domestic sewage, irrigation return flows, industrial discharges, nuclear, or nuclear byproduct material.

447.02 **Applicable Statutes and Regulations**

Federal and state legislation and regulations related to hazardous materials can be found via WSDOT’s home page:

 <http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, then Hazardous Materials, then [Go to Links Page.](#)

Or by direct link:

 <http://www.wsdot.wa.gov/environment/hazmat/hazwqec-links.htm>

Or:

Click on Site Index, then H, then Highways and Local Programs, then [More>>](#), then Operations then Environmental Legislation, then look under Solid/Hazardous Wastefor USC and RCW.

Or by direct link:

 <http://www.wsdot.wa.gov/TA/Operations/Environmental/EnvironLeg.htm>

(1) **National Environmental Policy Act/ State Environmental Policy Act**

The National Environmental Policy Act (NEPA), 42 USC Section 4231, requires that all actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations such as impacts related to hazardous materials are given due weight in project decision-making. The State Environmental Policy Act (SEPA), mandates a similar procedure for state and local actions.

Federal implementing regulations are at 23 CFR 771 (FHWA) and 40 CFR 1500-1508 (CEQ). State implementing regulations are in WAC 197-11 and WAC 468-12 (WSDOT). For details see [Section 410](#) through [Section 412](#).

(2) **Federal**

(a) **CERCLA**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 103, also known as "Superfund," is a remedial statute that created the legal framework for identifying parties liable for hazardous waste contamination and requiring them to take responsibility for cleanup operations. Under this statute a person or agency is required to provide notification of releases or potential releases of hazardous materials. CERCLA also created the USEPA ranking system and the National Priorities List (NPL). CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA), which introduced more stringent and detailed guidelines for remediation, as well as more complex liability issues. It also defined and provided for the now common defenses against liability for potentially responsible parties. Superfund is the name of the account held by USEPA to provide funding for hazardous waste site cleanups where the potentially responsible party or person (PRP) cannot be identified or does not have the funds available to conduct the cleanup.

(b) **Resource Conservation and Recovery Act**

The Resource Conservation and Recovery Act (RCRA) is a preventive statute, which provides requirements for the treatment, storage, and disposal of hazardous waste. The provisions in RCRA are often referred to as the "cradle to grave" liability concept. Under RCRA, EPA provides the definitions and methods of identifying and classifying hazardous wastes. This legislation also defines who generates hazardous waste that requires USEPA identification numbers and manifests to transport hazardous waste. In 1984, RCRA was amended by the Hazardous and Solid Waste Amendments (HSWA), which greatly expanded its initial scope. In the amendments, Congress prohibited land disposal of certain wastes and created treatment standards for such wastes. RCRA Subtitle I40 (CFR 280, 281, 282) establishes requirements for ownership, operation, maintenance, and closure of underground storage tanks, and Subpart M (40 CFR 61) defines national asbestos emissions standards.

(c) **Occupational Safety and Health Act**

The Occupational Safety and Health Act (OSHA) establishes requirements for site safety procedures, worker training, and worker safety and health standards for employees engaged in work related to hazardous materials. Regulations adopted under this act include the Hazardous Waste Operations and Emergency Response, 29 CFR 1910. This regulation requires specific levels of annual training for everyone working with hazardous wastes and for certain levels of supervised on-site experience.

(d) Clean Water Act

The Clean Water Act (CWA), 33 USC Section 1251 et seq. (formally known as the Water Pollution Control Act), provides for comprehensive federal regulation of all sources of water pollution. It prohibits the discharge of pollutants from other than permitted sources, and authorizes cleanup, injunctive, and cost-recovery powers where an imminent hazard is caused by pollution. Other provisions prohibit the discharge of oil and other hazardous substances; impose criminal penalty for failure to notify the appropriate authorities of such discharges; and provide for citizen suits.

(e) Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), 42 USC Section 300(f) et seq., provides broad administrative and legal authority to protect public drinking water systems. Primary enforcement authority is given to the states. It applies when any contaminant, defined broadly as “any physical, chemical, biological, or radiological substance or matter” is present in, or about to enter, a public drinking water system. See USC Title 42, Chapter 6A, Subchapter XII for provisions on safety of public water systems.

(f) Clean Air Act

The Clean Air Act (CAA), 42 USC Section 7901 et seq., provides federal authority to regulate all stationary and non-stationary (e.g., motor vehicle) sources of air pollution. Under Section 112 of the Act, USEPA is empowered to promulgate uniform national standards for hazardous air pollutants. Hazardous air pollutants are defined as those likely to cause an increase in mortality, serious irreversible illness, or incapacitating reversible illness. While nonhazardous air pollutants are regulated with some discretion, hazardous air pollutant standards are strictly enforced.

(g) Toxic Substances Control Act

The Toxic Substances Control Act (TSCA), 15 USC Sections 2601-2629, regulates the manufacture, processing, and commercial distribution of chemical substances and mixtures capable of causing an adverse reaction to health or the environment. Certain hazardous substances, such as polychlorinated biphenols (PCBs), are regulated under TSCA.

(h) Endangered Species Act

The Endangered Species Act (ESA) of 1973, 16 USC 1531-1543 aims to conserve species and ecosystems and allow recovery of threatened and endangered species. Section 7 of the ESA requires each federal agency to ensure its actions which authorize, permit, or fund a project do not jeopardize the continued existence of any threatened or endangered species or their habitat. The ESA specifically prohibits discharge of hazardous materials to the environment in a way that affects threatened or endangered species or their habitat. Damage to habitat is considered a “taking” whether the habitat is currently in use, or may be in use in the future. For details, see [Section 431](#), [Section 436](#), and [Section 437](#).

(3) Washington State

Washington State laws and regulations often contain more stringent requirements than their federal counterparts. For activities in Washington, these state regulations take precedence over all other laws and rules.

(a) Dangerous Waste Regulations

Dangerous Waste Regulations, WAC 173-303, implement RCRA and the Hazardous Waste Management Act, RCW 70-105. These regulations, considerably more comprehensive than RCRA, provide for waste identification procedures unique to Washington State. The regulations define generator, transportation, storage, and disposal requirements, including forms and rules related to manifesting and transporting hazardous waste. (see [Section 447.06](#), Permits and Approvals).

(b) Model Toxics Control Act Cleanup Regulation

The Model Toxics Control Act Cleanup Regulation, WAC 173-340, implements the Model Toxics Control Act, RCW 70.105D. Several administrative rules in this regulation concern WSDOT. These include strict requirements for site discovery and reporting, site assessments, and state hazardous site lists. Any hazardous substance released to the environment must be reported to the Department of Ecology (Ecology) within 90 days of discovery. Most important, the regulation defines standard methods used to assess whether a site is contaminated or clean.

WSDOT and Ecology general roles and responsibilities are clarified by a written implementing agreement (see [Section 447.04](#)).

(c) Standards for Solid Waste Handling

Minimum Functional Standards for Solid Waste Handling are contained in WAC 173-350, which implements the Solid Waste Management Act, RCW 70.95. Since this legislation assigns solid waste management responsibility to local governments, WSDOT encounters a wide variety of rules and procedures for disposal of solid and problem wastes.

(d) Underground Storage Tanks

The RCRA Underground Storage Tank Program is implemented through WAC 173-360. Most important to WSDOT is the very short (24-hour) reporting requirement for leaks and the release investigation requirements imposed on operators and owners of regulated tanks. Tanks not required to be registered have a 90-day reporting requirement. A related regulation is the Uniform Fire Code 7902.1.7.2.3 (WAC 51-34-7902.1.7.2.3). This regulation requires that USTs not in service for less than one year must be temporarily closed in place and that tanks not in use for more than one year must be either permanently closed in place or removed. The removal of USTs requires permits and a licensed UST remover. Under no circumstances should an unlicensed individual remove an UST.

(e) Sediment Management Standards

Sediment Management Standards, WAC 173-204, implements marine sediment quality and cleanup standards similar to those contained in the MTCA. This regulation imposes a number of unique requirements that impact WSDOT activities, particularly those of Washington State Ferries and other transportation projects in or near coastal zones and sediment impact zones. Special sampling and laboratory analysis protocols complicate site assessments when the Sediment Management Standards apply.

(f) Water Quality Standards

Pollution of state waters is controlled by two administrative regulations that implement RCW 90.48, Water Pollution Control Act. WAC 173-201 A, sets water quality standards for fresh and marine surface water and establishes criteria for toxic substances, pH, dissolved oxygen, and aesthetic values. WAC 173-200 contains similar regulations for groundwater, with special emphasis on radionuclides and carcinogens. (See [Section 431](#) and [Section 433](#).)

(g) Land Treatment – Cadmium

WAC 173-303-655 contains land treatment standards for owners or operators who treat or dispose of dangerous waste. Specifically, WAC 173-303 section 655(5)(iv)(b) identifies certain requirements for high levels of cadmium. Most important to WSDOT is the requirement to notify future property owners by a stipulation in the land record or property deed that because the property is contaminated with high levels of cadmium, food chain crops must not be grown on the property.

(h) Occupational Health Standards

WAC 296-62, contains occupational safety and health standards managed by the Department of Labor and Industries (L&I). Part P and Part R, Hazardous Waste Operations and Emergency Response (HAZWOPER), contain the state regulations that implement OSHA Standards (29 CFR 1910.120). These rules cover operations at known hazardous sites and initial investigations of sites identified by the government, which are conducted before the presence or absence of hazardous substances has been ascertained. They apply to the majority of site assessments conducted by WSDOT. This regulation contains rules on site assessments and control, training, protective equipment, and emergency response.

(4) Federal and State – Lead-Based Paint

A number of federal and state statutes and regulations apply specifically to WSDOT projects involving work with lead-based paint, most often those that include renovation or demolition of buildings or bridges (see [Section 447.05 \(7\)\(c\)](#)).

(a) Environmental Health Issues

The federal RCRA, CAA, and CWA prohibit the release of lead into the environment. The MTCA also provides for cleanup standards in the event of a release. Washington's DWR (WAC 173-303) define tracking and disposal requirements and establish liability and ownership for hazardous wastes. See [Section 447.06](#) for procedures on obtaining a WAD number using the Form 2.

(b) Worker Safety

In accordance with various sections of WAC 296-62 and 296-155, the Washington Department of Labor and Industries (L&I) enforces occupational safety requirements to protect workers from exposure to lead during work-related activities. In general, these standards cover worker right to know (hazard communication), training, personal protective equipment, medical surveillance, and work methodologies.

(c) Real Estate Services Property Management

Transportation projects also must comply with the Professional Workforce requirements under TSCA Title IV. The most pertinent is Section 406, which requires that owners of properties provide renters and purchasers with a USEPA pamphlet when that property either contains or has the potential to contain lead-based paint. This requirement is also linked to Title X of the Housing and Community Development Act of 1992, Section 1018. This section requires disclosure of known or potential location of lead-based paint in residential properties. It does not require testing or removal of lead-based paints.

(5) Liability and Highway Project Development

Under current state and federal hazardous waste cleanup statutes, liability is strict, joint, several, and retroactive. This means that all former, current, and future property owners are liable for contaminated property. If WSDOT acquires contaminated property, it can be held liable for any cleanup regardless of the “degree of guilt.” The fact that WSDOT can be connected to a contaminated waste site can establish potential liability. If two or more parties are involved, either could be held responsible for the entire cost of cleanup. WSDOT can also be held liable if it was a prior owner; thus, selling land does not protect the department from liability.

WSDOT liability is not limited to remediation costs. Significant common law awards for damages associated with liability are frequent, and where willful misconduct or negligence is involved there is no limit to liability. Consequently, WSDOT must continuously defend itself against liability, and minimize responsibility for hazardous wastes in all stages of highway project development.

WSDOT can also incur liability because of the acts or omissions of state employees. Generally, if a state employee's actions are "in good faith" and "within the scope of that person's official duties," the Attorney General's Office would represent that employee in any action against the employee, and the state would satisfy any judgment against the employee. However, criminal convictions, as well as civil fines, can and have been obtained against individuals whose actions were willful or grossly negligent. Sovereign immunity afforded the government does not attach to individual government employees to immunize them against prosecution for their criminal acts. An educated employee is the best defense against the agency's criminal liability.

- Current laws give WSDOT some limited protection against liability, as described below: **Cleanup liability.** WSDOT policy encourages timely removal of abandoned USTs and contamination encountered on its property without Ecology assistance or approval. These “independent cleanups” are allowed under MTCA (Section 447.02(3)(b)) without an administrative agreement or order in place. A WSDOT managed “independent cleanup” generally accelerates remedial actions and is far less costly than the lengthy process of establishing formal agreements with Ecology, such as Agreed Orders and Consent Decrees. In addition, timely removal reduces the risk of contaminant migration, third party lawsuits, and the potential for WSDOT to encounter unanticipated construction problems. After cleanup

has been completed, WSDOT must report the independent cleanup to Ecology within 90 days.

WSDOT may seek certification from Ecology that the cleanup was adequate in the form of a “No Further Action” letter. Ecology requires a fee to review the cleanup and upon approval will issue the No Further Action letter, which provides assurance that Ecology will not require additional cleanup work in the future based on known site conditions.

After performing an independent cleanup, WSDOT may seek cost recovery from parties who may be potentially liable; however successful cost recovery is much less certain without an order or consent decree.

- ***Third party defense.*** This defense applies if WSDOT can show that the contamination was solely the result of an act by someone other than an employee or agent of WSDOT or a person involved in a contractual relationship with WSDOT, and that WSDOT took due precautions against foreseeable acts by others and the foreseeable consequences of those acts. The due care concept implies that WSDOT conducted reasonable inquiry and acted with reasonable diligence to prevent the release or spread of contamination.
- ***Innocent landowner defense.*** This defense under MTCA may apply if WSDOT acquires property after disposal of hazardous substances on the property and WSDOT did not know nor had no reason to know about the hazardous materials. To consider this defense against liability, WSDOT must clearly demonstrate that all reasonable inquiry had been undertaken to discover, investigate, and characterize the hazardous substance and, once discovered, that due care was exercised to prevent the release or spread of contamination. Under CERCLA, the acquisition of property under the state's eminent domain power, by purchase or condemnation, creates an innocent landowner defense regardless of the state's knowledge of the contamination. However, the state must still show that any hazardous substances were handled with due care.

WSDOT takes the following measures to manage potential liability risk:

- If necessary, WSDOT performs reasonable inquiry by conducting environmental site assessments, as appropriate, prior to property acquisition.
- When USTs and/or contamination are identified prior to property acquisition, WSDOT uses performance bonds, indemnifications and other tools to minimize agency costs and liability related to site remediation.

In spite of using the above two sets of tools, WSDOT sometimes discovers unanticipated contamination on property it owns. Often, past owners/operators cannot be identified for cost recovery. However, where a past owner/operator is a larger, still-solvent oil company, WSDOT has been successful in soliciting participation in funding and implementing the remediation. WSDOT has been especially successful in recovering costs when early participation is solicited in remedial design.

Defenses against liability involve demonstrating that all reasonable inquiry was accomplished. Reasonable inquiry is important throughout project development, and helps in establishing litigation defense. When WSDOT acquires property, it automatically assumes liability and responsibility for cleanup. It is imperative, therefore, that the presence of hazardous materials be identified as early in project planning as possible, and certainly before property acquisition. The importance of early identification cannot be overemphasized. This defense can be accomplished through early site investigation.

447.03 Policy Guidance

The Transportation Commission's Policy Catalog contains a specific policy on use of hazardous substances: Policy 6.3.8 states: "Reduce the potential adverse effects that transportation, storage, application, and disposal of hazardous substances can have on surface and groundwater, fish and wildlife populations and habitat, and air quality. Reduce, and eliminate where practical, the reliance of the state transportation system on environmentally hazardous substances utilized in the construction and maintenance of transportation facilities; ensure the adoption of best management practices in handling hazardous substances for transportation purposes." The policy and action strategies are available at the WSDOT Library.

447.04 MOUs, MOAs, IAs

(1) **Implementing Agreement on Hazardous Waste Management**

This agreement between Ecology and WSDOT concerns hazardous waste management and reduction, site remediation, and regulatory compliance. The agencies agree to cooperate in carrying out their statutory responsibilities to meet state transportation requirements and protect public health and safety and the natural environment. The agreement sets forth procedures for each agency to follow in reaching its goals and objectives. The agreement is online via WSDOT's home page:



<http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, then Hazardous Materials, then Documents and then Hazardous Material Documents and Publications (under Memorandum of Understanding).

Or by direct link:



http://www.wsdot.wa.gov/environment/hazmat/haz_docpubs.htm



Implementing Agreement between the Department of Ecology and the Department of Transportation Concerning Hazardous Waste Management (April 1993).

(2) **Water Quality Implementing Agreement**

This MOU, between WSDOT and Ecology, provides guidance on meeting water quality requirements on bridge construction and maintenance. The agreement is being updated to include water quality guidance on other types of construction, namely concrete and asphalt grinding. The agreement, described more fully in **Section 431.04(1)**, is online via WSDOT's home page:



<http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, then Compliance Branch, then Construction of Projects in State Waters MOA, then Water Quality Implementing Agreement between WSDOT and Ecology (Interagency Agreements).

Or by direct link:



<http://www.wsdot.wa.gov/environment/Programmatics/docs/impagfin.pdf>



Implementing Agreement between the Washington State Department of Ecology and the Washington State Department of Transportation Regarding Compliance with the State of Washington Surface Water Quality Standards (February 1998).

447.05 Technical Guidance

Two parallel and overlapping processes are described in this section: environmental documentation (discipline studies in support of an EIS or EA) and hazardous materials investigations. See [Exhibit 447-1](#) for an illustration of the relationships between these processes. Discipline studies are done during development of a new transportation project. Hazardous materials investigations may be done for property acquisition, property management of potentially contaminated sites, or to characterize contaminated media prior to construction (see [Section 510.09](#)). Hazardous materials investigations may be done independently or in support of environmental documentation.

Hazardous materials investigations may be done at a corridor level, beginning with GIS screening at the planning stage, and/or at a site-specific level. Site specific investigations may be conducted to progressively greater levels of detail in an Initial Site Assessment (ISA), Preliminary Site Investigation (PSI), and Detailed Site Investigation (DSI).

Procedures for WSDOT discipline studies are described first, followed by procedures for an ISA, PSI, and DSI. These are each separate reports, but the hazardous materials investigations may be done concurrently with a discipline study and the same information may be used in both reports.

(1) **General Guidance**

Information on WSDOT's Hazardous Materials Program, including contacts, site investigation procedures, contacts and consultants, training opportunities, documents and links, is online at WSDOT's home page:



<http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, then Hazardous Materials.

Or by direct link:



<http://www.wsdot.wa.gov/environment/hazmat/default.htm>

(a) **Terminology**

FHWA, WSDOT, USEPA, and the real estate industry use different terminology to describe the sequential steps in Hazardous Materials Assessments that relate directly to timing and decision making in the transportation project development process. [Table 447-2](#) summarizes this terminology.

Table 447-2:
Terminology for Screening/Evaluating
Sites for Hazardous Materials

FHWA/WSDOT	USEPA/Ecology	Real Estate Industry/ Banks
Initial Site Assessment (ISA)	Remedial Site Evaluation Preliminary Assessment/Initial Investigation	Phase I
Preliminary Site Investigation (PSI)	Site Inspection/Initial Investigation complete	Phase II
Detailed Site Investigation/Hazardous Waste Management Plan (DSI/HWMP)	Remedial Investigation/Feasibility Study (RI/FS)/Same	Phase III

The guidelines in this section describe the procedures and requirements for the following hazardous materials management practices:

- Assessing the potential for discovering hazardous materials and the methods for identifying such hazardous materials in the planning and project development process and on properties owned and managed by WSDOT.
- Preparing complete and legally defensible site investigation documentation.
- Handling and disposing of sampling wastes generated during preliminary and detailed site investigations.
- Evaluating and managing the hazardous materials potential in special problem areas such as underground storage tanks (USTs), asbestos abatement, and lead-based paint.

(b) WSDOT Environmental GIS Workbench

This GIS interface is for internal WSDOT use only. It has over 60 layers of environmental or natural resource management data. The program works with federal, state, and local agencies to maintain a collection of the best available data for statewide environmental analysis. Available databases include CERCLA (Superfund) sites, RCRA sites, and Toxics Cleanup Program sites.

w:\Data\GIS\GISOSC\GEODATA

For a list of current data sets, see WSDOT's environmental web site:

 <http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, then Environmental GIS and then WSDOT GeoData Catalog (under Related Information).

Or by direct link:

 <http://www.wsdot.wa.gov/mapsdata/geodatacatalog/default.htm>

(c) **FHWA Guidance**

FHWA Technical Advisory T6640.8A (October 1987) gives guidelines for preparing environmental documents, including specifically hazardous waste sites in the vicinity of a proposed project. During early planning, the location of any permitted or nonregulated hazardous waste sites should be identified and locations shown on a map in relationship to the alternatives under consideration. If a known or potential hazardous waste site is affected by an alternative, information about the site, the potential involvement, impacts and public health concerns of the affected alternative(s), and the proposed mitigation measures to eliminate or minimize impacts or public health concerns should be discussed in the draft EIS. If the preferred alternative impacts a known or potential hazardous waste site, the final EIS should address and resolve the issues raised by the public and government agencies. For details, see FHWA's home page:

 <http://www.fhwa.dot.gov/>

Click on Legislation and Regulations, then FHWA Directives and Policy Memorandums, then FHWA Technical Advisories, then T6640.8A.

Or by direct link:

 <http://www.fhwa.dot.gov/legsregs/directives/techadv/t664008a.htm>

In addition, FHWA's online Environmental Guidebook contains documents on hazardous waste, including Supplemental Hazardous Waste Guidance (January 1997), Hazardous Wastes in Highway Rights-of-Way (March 1994), and Interim Guidance: Hazardous Waste Sites Affecting Highway Project Development (August 1988). Available via the FHWA home page:

 <http://www.fhwa.dot.gov/>

Click on FHWA Programs, then Environment, then Environmental Guidebook, then Index, and then Hazardous Waste and Brownfields.

Or by direct link:

 <http://environment.fhwa.dot.gov/guidebook/chapters/v1ch7.htm>

(2) **Corridor Study Plan Preparation**

Occasionally a land use history analysis is prepared prior to discipline study development early in the scoping phase. While there is no guidance for the preparation of these technical memoranda, ESO has examples upon request.

(3) **Discipline Report**


The Hazardous Materials Discipline Report is one of several such reports prepared to support EISs, EAs, or SEPA checklists. A hazardous materials discipline study should be completed for any project that requires the acquisition of large portions of new right of way. The study must be thorough enough to provide the data necessary to recognize and assess the hazardous materials impacts of a proposed project. Hazardous materials investigations (ISAs, PSIs, and DSIs) may be used to document the discipline report.

The current version of the Hazardous Materials Discipline Report checklist is maintained online at WSDOT's home page:

 <http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, Hazardous Materials, then Site Investigations & Services, then variety of services, and then Hazardous Material Discipline Studies (HMDS).

Or by direct link:

 http://www.wsdot.wa.gov/environment/hazmat/haz_siteguide.htm - Hazardous_Materials_Discipline_Study

The decision process for preparing a discipline report is illustrated in **Exhibit 447-2**.

A discipline study is broad in scope, and identifies which properties require more detailed investigation. It focuses on the history of properties along the right of way, particularly those with industrial, commercial, or waste disposal activities. Because unknown contamination associated with historical activities can become a major liability issue and/or cause major cost overruns and delays, historical reviews must be thorough. Research sources vary depending on availability but often include aerial photography, business directories, Sanborn Insurance maps, published local histories, published theses, historical societies and museums, and interviews. Current information is usually obtained through regulatory environmental database lists. However, just listing the sites contained on these lists is not sufficient for the report. The report should include the extent of the known problem, status of enforcement actions, and a summary of impacts to the transportation project. This information is necessary to assess route alignment options, cleanup and mitigation costs, and prepare property acquisition plans.

Land uses that involve any of the operations, processes, or activities like those listed in **Table 447-3** are likely to generate hazardous materials and to have chemical or fuel storage facilities on site.

Report writers should understand the requirements and objectives for hazardous materials discipline studies in order to prepare comprehensive contract bids and to avoid lengthy delays in rewrite efforts. The requirements below are organized by report section headings. In addition, writers and reviewers of Hazardous Materials Discipline Reports should reference the checklist.

(a) Introduction

The introduction should clearly establish the parameters that will be followed in the report; i.e., what is being studied and what study methods will be employed. There should also be a brief discussion tying the report to the project objectives and alternatives. Ensure that the study boundaries are consistent with the project, any defined alignments, discipline study checklist, and ASTM standards as appropriate.

Study areas may be defined by any number of methods, from similar land uses to project segments, to alignments. Where possible, these study areas should match or easily transpose into any project areas developed for the EIS. A brief windshield survey of the project will often make defining study areas easier.

(b) Studies and Coordination

Identify all the resources that were researched for the study and describe how they were used to identify and evaluate sites to be listed. Sections 3.2 and 3.3 of the discipline study checklist give examples of commonly used resources, but this is not to be considered a complete list. The similarity of these resources to those used in the ASTM guidelines for conducting an Initial Site Assessment (ISA) (Phase I) is noteworthy. ASTM provides a set standard for conducting “reasonable inquiry” into specific site investigations.

Although the research expected for a discipline study is similar in nature to that of an ISA, the investigation is much more flexible and not constrained to rigid rules. The investigation's level of detail can vary considerably depending on the complexity and size of the project, severity of potential contaminants, and the need for specific detail to assess impacts. This level of detail and a flexible approach to conducting research is consistent with AASHTO guidelines.

Table 447-3
Example Land Uses Likely to Generate Hazardous Materials

Analytical laboratory operations.	Manufacture, refinishing, or stripping of furniture or wood products.
Battery manufacturing, rebuilding, or recycling.	Metal finishing, refinishing, and etching (auto body, printed circuit board manufacturing, jewelry fabrication).
Building and excavation of structures and roads.	Metal galvanizing.
Building and repair of boats.	Nursery and greenhouse operations.
Chemical and petroleum product storage facilities (both above and under-ground tanks and flammable storage rooms).	Operation or repair of printing and reproduction equipment.
Chemical manufacture, formulation, or processing.	Paint formulation and mixing.
Chemical treatment of lawns, gardens, yards, or provision of other landscape and tree services.	Photographic processing and printing.
Cosmetic manufacturing or processing.	Pressure treating or preserving wood products.
Drum, barrel, and tank reconditioning.	Product distribution, consolidation, and shipping operations.
Dry cleaning and laundry services.	Production and repair of shoes, including hide tanning for leather.
Electroplating and other metal manufacturing and fabricating operations.	Provision of home, industrial, or commercial pest control.
Fueling, repair, and maintenance of motor vehicles (automobiles, aircraft, trucks, construction equipment, RVs).	Recycling facilities.
Home, garden, pool, or agricultural supply manufacturing.	Schools, auditoriums, hotels, and other facilities with large heating requirements.
Landfills.	Scrap metal and junk yard operations.
Leasing or renting of vehicles, maintaining fleet operations, renting equipment.	Solvent recycling.
Manufacture, formulation, or processing of pesticides or agricultural products or chemicals.	Textile manufacturing (including fabric dying and finishing).
	Warehouse operations.
	Waste or spent product incineration.

The studies and coordination section includes a list of sites (and only those sites) that the project will impact and that possess potential for involvement with contaminants. Section 3.4 of the Discipline Report checklist requires the preparer to validate the lists of suspected contaminated sites, so sites that will not be impacted are eliminated from further consideration. Some writers may prefer to include the list of all the sites identified in the initial research as well as a final list prepared after validation. This large list is usually attached as an appendix.

The Federal Highway Administration (FHWA) supplemented its guidance for hazardous materials on January 16, 1997. In this supplemental guidance, FHWA described sites that could be dealt with in a relatively predictable manner and sites that could be considered substantially contaminated. For preparation of Hazardous Materials Discipline Reports, the following definitions are to be used:

- ***Reasonably Predictable Sites.*** Sites where the nature of potential contamination is known based on existing investigation data, or where it can be reasonably predicted based on observations of the site, and/or experience at similar sites, and/or best engineering judgment. Reasonably predictable sites are typically small to medium in size, the potential contaminants are not extremely toxic or difficult to treat, and probable remediation approaches are straightforward.
- Examples of sites generally classified as “reasonably predictable” are gas stations, auto repair shops, most underground storage tanks (USTs), leaking underground storage (LUSTs), above ground storage tanks (ASTs), small manufacturing operations, and buildings with asbestos and/or materials that contain lead-based paint.
- ***Substantially Contaminated Sites*** – Sites which will create a major liability for WSDOT either in construction liability or by virtue of acquiring all or a portion of the site. If the site has undergone a detailed investigation and a feasibility study, the impacts and remediation costs may have already been predicted. Nonetheless, the site will be identified as substantially contaminated because of its substantial impact or liability.
- Other sites are considered substantially contaminated sites because they are not reasonably predictable. In general, these will be sites that possess a potential for substantial soil, water, and/or sediment contamination, and/or the information necessary to predict remedial costs is lacking, and the contaminants are persistent and/or expensive to manage. The site may be contaminated over a large area with a single contaminant or over a smaller area with multiple contaminants. Substantially contaminated sites are typically large and/or have large volumes of contaminated materials, and/or have a long history of industrial or commercial use.
- Examples of sites that could be classified as “substantially contaminated” include wood products facilities, wood treating operations, metal plating facilities, large bulk petroleum facilities, refineries, hazardous waste treatment facilities, or other sites that use or used large amounts of contaminating materials.

(c) *Affected Environment*

This section should include three separate discussions: land use, physical environment, and a study area summary. Many of the impacts and mitigation considerations in Sections V and VI of the checklist are predicated upon knowledge and assessment of the land use and physical environment. These two discussions should give a comprehensive accounting of the present land use, its evolution over time, critical areas if any, consideration of likely contaminants including their complexity and distribution, and issues of cleaning up contaminants in the existing environment. The types and distribution of at risk populations should also be addressed.

The requirements for discussing the physical environment are straightforward and are presented in Section 4.2 of the Hazardous Materials Discipline Report checklist. The primary consideration for discussing the physical environment is the effect on contaminants, their distribution, and migration potential.

The discussion of study areas should contain details only of the sites in the final list developed for Studies and Coordination. These are the sites that will be impacted by the project. Detailing other sites is superfluous to the needs of the report. The manner in which this discussion is organized is up to the writer; it should be logical and recognizably related to the study areas and/or project segments discussed in the Introduction. This section of the discipline study should clearly identify the presence and extent of known and suspected contaminants, results of prior cleanup activities, and enforcement actions.

(d) Impacts

Preparing a comprehensive discussion of the impacts of contaminated sites on the proposed project requires an assessment beyond mere repetition of the obvious existence of contaminants. The writer should not repeat the details from the Affected Environment section. At this point what is needed is a thoughtful identification and explanation of the impacts. Further, writing this section requires some knowledge and consideration of the project construction lanes, design, and techniques. Although detailed design plans will most likely not be available, considerable information about the need for bridge work, pier construction, cut and fill, realignments, and property acquisition needs will be available.

When discussing construction impacts, keep in mind that this is a transportation construction project and not a simple property transfer. Consideration should be given to such issues as changes in migration pathways, impacts on groundwater, worker safety, public health, consent decrees and enforcement orders, and regulatory impacts, especially local requirements. Quite often the impacts of generating contaminated construction soil and water wastes are neglected, as are worker and public health and safety. See [Section 480](#) for information on secondary and cumulative impacts. Operational impacts would occur as a result of the daily operation of the project once it is completed. Operational impacts should be discussed with secondary and cumulative impacts.

This section of the report contains recommendations for further investigations such as ISA, PSI, and DSI. Recommending investigations of a substantial number of sites may indicate that the report was not properly researched. Very few, if any, full ISAs should be recommended, since that type of research was conducted to create the list of sites (Studies and Coordination section) impacted by the project. It may be reasonable, in limited circumstances, to recommend some ISA work; for instance, to confirm the location and size of USTs.

Invasive testing through a PSI should be recommended only where it is necessary to confirm the existence and kind of contamination present in substantially contaminated sites without adequate data.

DSI recommendations may be appropriate for sites if that level of detail would be necessary to negotiate cleanup liability, develop construction bid items, and prepare health and safety plans for construction workers.

(e) Mitigation

This is another section of the report where the preparer is expected to demonstrate professional knowledge and initiative, and go beyond obvious generalities. The intent of this section is to describe the potential mitigation for impacts identified

in the previous section. Each identified impact must be addressed, whether or not a mitigation option is available. There should not be a discussion for an impact that was not previously identified in the impacts section.

Measures presented in this section are site and project specific; therefore, no set standards can be created. In general, the section should address at least the following issues:

- All contamination known or suspected to exist and be impacted by the project, through construction or property acquisition, must be addressed.
- Mitigation measures should consider innovative remediation measures and all applicable regulatory constraints. Early coordination with regulatory agencies, property owners, and local jurisdiction may also open up opportunities to mitigate environmental impacts.

The next area to be addressed is federal, state, and local regulations. Numerous permits and variances could cause considerable cost overruns and delays if neglected, and these should be identified. Measures to mitigate worker and public health and safety are often neglected. Such issues can easily be a major environmental concern.

The suggestions presented here should not be considered all inclusive. The Hazardous Materials Discipline Report checklist includes several other specific topics that may be discussed if they are pertinent to the project.

Estimates of the cleanup costs must be prepared for all alternatives. FHWA expects that every effort will be made to estimate cost liabilities. Lack of professionally developed cleanup cost estimates is a major cause for rejection of EIS documents. Because of the probability factors involved in preparing hazardous materials cleanup estimates, the costs should be prepared as the “most likely” case. These costs should reflect the most prudent and likely remediation method and any reasonable mitigation recommendations presented in this section.

(4) Initial Site Assessment (ISA)

The purpose of an ISA is to conduct all reasonable inquiry into specific parcels of land that may be contaminated and to assess impacts to WSDOT liability, design, and construction. All ISAs conducted by WSDOT are to follow the investigative procedures established by the American Society for Testing and Materials in *ASTM*

Standard E-1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The discussion of impacts and mitigation, however, is in addition to the ASTM. The ISA may be prepared independently or in support of a discipline study being done for environmental documentation.

The Initial Site Assessment Checklist guides the researcher through the assessment process and helps identify the records and documentation that should be included. Using this checklist alone is not sufficient; each item in the checklist must be documented in a report. Project offices should also keep completed files with documents related to the assessment not incorporated in the final report. The actual amount of documentation will vary depending on the complexity of the project and the past and current land uses.

Exhibit 447-3 provides guidelines for contents of documentation files. The ISA Checklist and recommended table of contents and format is maintained on WSDOT's home page:



<http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, Hazardous Materials, then Site Investigations & Services, then variety of services, and then Initial Site Assessment.

Or by direct link:



http://www.wsdot.wa.gov/environment/hazmat/haz_siteguide.htm -
[Initial_Site_Assessment_ISA_](#)

(a) Initial Site Assessment Process

Essentially, the ISA involves reviewing historic and current land uses with the intent of identifying whether there is a potential for contamination. This level of inquiry may be sufficient to assess the impacts to the project. It is not intended, however, to identify the extent of an identified problem. Other objectives of an ISA include:

- Protecting WSDOT from liability that may be incurred by unknowingly acquiring previously contaminated property.
- Assessing the need for sampling to confirm whether or not hazardous material is present.
- Establishing defenses available to WSDOT if hazardous material is discovered later.
- Beginning the site appraisal process and establishing a baseline condition for excess property.
- Assisting in the selection of specific project alternatives.

Since Regional Offices are most familiar with their respective areas and the details of a particular highway project, each region is encouraged to develop the staff and expertise to conduct ISAs. Assessments must be completed by an environmental professional in order to satisfy one of the legal elements of reasonable inquiry. An environmental degree is not necessarily a prerequisite to be considered an environmental professional. Work experience and continuing education can provide the requisite background. Regions wishing to qualify personnel should work closely with the WSDOT ESO to design a training program.

Because an ISA usually involves off-site records research, it can often be performed without having to enter a site and risk exposure to potentially hazardous situations.

The ISA is a detailed assessment of specific properties. Any property that may involve hazardous materials in any manner throughout its history should be subjected to a complete ISA. Land uses that involve any of the operations, processes, or activities listed in **Table 447-3** are likely to generate hazardous materials and to have chemical or fuel storage facilities on site.

A complete ISA consists of three major elements:

- Records review
- Site reconnaissance
- Interviews with government officials and property owners/occupants

- Several conditions constrain the scope of an ISA. The assessment does not include testing or sampling of any materials. Furthermore, it is site specific, in that it relates to a specific parcel. Also, appropriate inquiry is not exhaustive; there is a point where the cost and/or time expended to gather information outweighs its value. No site assessment can wholly eliminate uncertainty regarding the potential for hazardous environmental conditions.

(b) Records Review

The purpose of a records review is to obtain information that will help identify hazardous environmental conditions. Because of the possible impact of migrating hazardous substances from surrounding properties, the records review should include a minimum search distance of one mile from the parcel under review. Documents reviewed should be reasonably available public or private records, obtainable at a reasonable cost and time, and should not require extraordinary analysis of complex or irrelevant data.

Standard document sources may include some or all of those listed below. Federal information can be obtained from USEPA Region 10, and Washington State data can be obtained from Ecology. Note that Ecology has most federal records, so it is best to begin there. Local sources are unique to each region and may be extensive. Regional WSDOT offices may have their own list of sources. Some site lists can be accessed from WSDOT's home page:

 <http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, Hazardous Materials, and then Go to Links Page Documents, then Guidance Documents.

Or by direct link:

 <http://www.wsdot.wa.gov/environment/hazmat/hazwqec-links.htm>

- Federal NPL site list
- Federal CERCLIS list
- Federal RCRA lists
- Ecology General Files
- Ecology Confirmed and Suspected Contaminated Sites Report
- Ecology Hazardous Sites list
- Ecology LUST list
- Ecology UST list
- Local sources
 - Environmental health departments
 - Fire departments
 - Planning departments
 - Regional pollution/water quality agencies
 - Libraries and museums

Review physical setting documents, which provide information about the geology, hydrogeology, hydrology, and topography of a site. This information is important when conditions are such that hazardous substances are likely to migrate onto or from a parcel. A required physical setting source is a current US Geological Survey (USGS) 7.5-Minute Topographic Map. Recommended sources include soil maps from the Natural Resources Conservation Service, and USGS or state Geologic Survey groundwater and geology maps. Washington Department of Natural Resources (DNR) has an extensive natural resources library and Washington Department of Fish and Wildlife (WDFW) has aerial photos of many areas.

Historical use information is an important data source for assessing the potential for hazardous materials. These sources are numerous and those selected for review must, in the professional opinion of the reviewer, relate directly to identifying the use, storage, or generation of hazardous materials. Researching historic land uses prior to 1940 is not usually necessary, unless there is compelling evidence that major contamination occurred before then. Two outstanding sources for historic land use assessment are historic USGS Topographic Maps and aerial photography. Historic topographic maps are widely available at various government offices. Older WSDOT right-of-way plans often reveal potentially contaminated historic sites.

The WSDOT Geographic Services Branch provides extensive historical photography of Washington State, particularly areas containing rights of way. Local sources of data are surprisingly informative. Use fire insurance maps such as Sanborn, and directories such as Polk Directories, Kroll and Metsker Atlases, and various business directories, to identify past land uses of concern. Do not overlook local government records such as property tax files, zoning records, land title records, and fire department records. (However, these local sources cannot be the sole historical source consulted.)

(c) Site Reconnaissance

The purpose of a site reconnaissance is to observe a parcel, and any structures on the property, for recognized hazardous environmental conditions. Temporary easement (right-of-entry) may be required ([Section 447.05\(9\)](#)). Every effort should be made to examine the site physically. However, if access cannot be reasonably obtained or if a physical or health hazard may be present, observe the site from adjacent public properties. This procedure applies only to exterior observations.

Assessing interior conditions (asbestos and lead paint) is addressed below ([Section 447.05\(7\)](#)). A complete photographic record, written description, and maps of the property, to the extent practical, are essential for the documentation files. General site setting observations should include the following:

- **Current use** – Identify, in as much detail as possible, any current use likely to involve the use, treatment, storage, or disposal of hazardous substances or petroleum products. Verify that markings on manholes and well head lids are correct. They may lead to dry wells or vaults.
- **Past use** – Note and describe structures, certain layouts, or equipment, which may indicate past uses of concern.

- ***Current uses of adjoining property*** – Describe adjoining property uses to the extent that they present a possible migration impact.
- ***Past uses of adjoining property*** – Describe recognized past hazardous environmental conditions, which may indicate migration potential of contaminants. Also, past uses of other property may help identify past uses of the property in question, as certain types of businesses are frequently co-located.
- ***Above ground and underground storage tanks*** – Note any evidence of storage tanks, vents, or access ways. Patches in pavement can indicate former locations of tanks or fuel islands.
- ***Containers*** – Identify any containers that contain or might contain hazardous substances or petroleum products. Include the approximate quantities involved, types of containers, and storage conditions noted. Do NOT open or disturb any containers that are in poor condition or where labeling is absent or unclear as to the contents.
- ***Dry wells, water wells, and septic systems*** – Note anything related to wastewater or other liquid discharges (including storm water), or any drainage into a ditch, drain, or stream on or adjacent to the property. Describe all wells observed, especially injection wells, and indications of septic tanks or cesspools. Also indicate the location of dry wells. Lids to any of these may have incorrect markings, so the investigator should inquire whenever the contents are suspect.
- ***Asbestos and lead*** – Note any buildings constructed before 1980; they are presumed to contain asbestos and/or lead based paint.
- ***PCBs*** – Describe electrical or hydraulic equipment known to contain or likely to contain PCBs. Fluorescent light ballasts need not be noted if the structure was built after 1977.
- ***Stains*** – Describe in detail the visual characteristics and extent of stained soils or pavements. Note whether an odor is present.
- ***Odors and liquids*** – Identify strong, pungent, or noxious odors and their sources. Describe standing water, pools, or sumps containing known or unknown liquid.
- ***Vegetation*** – Absence of vegetation, or areas of stressed vegetation other than those due to insufficient water, often indicate improper disposal of chemicals or overuse of pesticides. Document any observations.

The Site Reconnaissance Checklist and guidance information is maintained online at WSDOT's home page:

 <http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, Hazardous Materials, then Site Investigations & Services, then variety of services, and then Site Reconnaissance.

Or by direct link:

 <http://www.wsdot.wa.gov/environment/hazmat/Recon>

(d) Interviews

The objective of conducting interviews is to obtain information about possible hazardous environmental conditions that corroborates information obtained in a records review or site reconnaissance, or that identifies new information. Interviews often lead to the initial discovery of hazardous conditions and should not be underestimated.

Who should be interviewed is a matter of professional judgment. However, make a reasonable attempt to interview major occupants, property owners, neighbors, and key managers for commercial properties. Others who may be able to provide needed information include former employees, museum curators, librarians, local historians, and longtime residents. Although some people dislike being interviewed, most people are willing to provide answers to direct and concise questions. In addition to asking for information on recognized environmental conditions connected with the property, ask whether any of the following documents exist, and whether copies can be obtained within a reasonable time and at reasonable cost.

- Environmental site assessments reports
- Environmental audit reports
- Environmental permits
- Registrations for UST
- Material safety data sheets
- Safety and spill prevention and control plans
- Reports regarding hydrogeologic conditions on the property or surrounding area
- Notices regarding past or current violations from any government agency
- Hazardous material generator notices or reports

Make a reasonable attempt to interview at least one staff member of any of the following local government agencies with jurisdiction over the area in which the property is located:

- Fire department
- Health agency
- Agency responsible for hazardous materials disposal or other environmental matters

(e) Documentation Files

Carefully organize, catalogue, and document all information gathered during an ISA. Documentation is important, because part or all of it may serve as the basis not only for WSDOT decision-making, but also for future legal action. Even where litigation does not seem likely, the high degree of liability and costs associated with hazardous materials involvement increases the probability that litigation may arise in the future.

Since hazardous materials site information would be essential in any future litigation, it should be retained indefinitely. The amount of data and analysis needed for a particular site or project alignment depends upon the likelihood of its acquisition or adoption as the preferred alternative. Regions should carefully assess the risk incurred in deciding to restrict the level of analysis required for any site or project.

Even a small project can generate a large amount of documentation. Project documentation files should contain all the information supporting the conclusions contained in the ISA Report. See [Exhibit 447-3](#) for documentation that WSDOT considers essential for a complete project hazardous materials file. No format is prescribed for a documentation file. Individual regions should follow their current record keeping practices for preparing and tracking documentation files.

An ISA Report is prepared according to ASTM recommendations for format and content, modified for WSDOT reports as shown in [Exhibit 447-4](#). Deviations, omissions, and additions in the recommended contents are permissible, if determined appropriate by the environmental professional and supported by the documentation file.

(f) Recommendations

The final step in the process is to summarize the assessment of all material environmental risks which may be associated with the property and recommend what should be done; for example further investigation or site cleanup. The narrative should document compliance with ASTM Standard E 1527 to qualify for the innocent purchaser defense to CERCLA liability, i.e. the requirement to conduct “all appropriate inquiry into the previous ownership and uses of a property consistent with good commercial or customary practice.” Property environmental risk assessment should include not only CERCLA issues of soil and groundwater contamination, but other risks to the environment, or to worker or public health and safety such as asbestos or lead-based paint in building structures, or wetlands which can impact development on a property.

(5) Preliminary Site Investigation (PSI)

A PSI is a limited field investigation and is conducted only when the ISA determines there is a potential hazardous materials risk associated with the site. The primary purpose of a PSI is to confirm whether or not the risk exists. It is imperative that the PSI be conducted as early in the project as possible, certainly before making a right of way acquisition decision. A PSI may also be needed during the construction phase (see [Section 510](#)). The PSI may be prepared independently or in support of a discipline study being done for environmental documentation.

Conducting a PSI requires some form of intrusive testing. The Regional Office is responsible for obtaining all necessary rights of entry and locating all underground utilities. Duration of a right-of-entry should be a minimum of six months; preferably one year. If a property owner refuses to grant a right-of-entry, the region can obtain a court-ordered temporary condemned easement for the purpose of conducting a PSI. Condemned easements should be used only when acquisition of the property is essential to the project and when knowledge of the existence and extent of contamination is necessary to protect WSDOT against future liability. For details, see [Section 447.05\(9\)](#).

Although limited in scope, a PSI should not be viewed as a “quick and dirty” project requirement. The planning, equipment, and data requirements are the same as for a more

detailed site assessment. PSIs are generally both costly and time consuming; costs can exceed \$15,000, and completion often requires two to six months. Personnel conducting a PSI require specialized training and certification in hazardous material operations, and must comply with unique health and safety requirements. Consequently, within WSDOT, PSIs are generally conducted by trained ESO staff or approved environmental contractors.

All PSIs conducted by WSDOT are based on the investigative procedures established by the American Society for Testing and Materials in ASTM Standard E-1903-97, Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process. Guidance for conducting a Preliminary Site Investigation Checklist directs the environmental professional through the investigative process and helps identify the records and documentation that should be included in the report. The actual amount of documentation depends on the complexity of the project as well as the past and current land uses of the subject property. **Exhibit 447-3** provides guidelines for contents of documentation files. Guidance for conducting a Preliminary Site Investigation is maintained online at WSDOT's home page:



<http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, Hazardous Materials, then Site Investigations & Services, then variety of services, and then Preliminary Site Investigation (PSI).

Or by direct link:



http://www.wsdot.wa.gov/environment/hazmat/haz_siteguide.htm - Preliminary_Site_Investigation_PSI

(a) Methodologies

Most PSI methods involve some form of investigative sampling or analysis, especially where hazardous materials are known or suspected to have penetrated below the surface. Investigative technologies are selected based on knowledge of how hazardous materials respond to specific geologic conditions, and on analytical requirements.

Subsurface geophysical testing methods are used to evaluate geologic conditions that create or impact hazardous material migration. These methods include electromagnetics, magnetometer studies, and ground-penetrating radar. They are also capable of determining contamination plumes and locating buried wastes, pipe conduits, and underground storage tanks.

Samples taken for laboratory analysis are the primary means for identifying the presence and extent of contamination hazardous to human health or the environment. A number of techniques are used to take soil and water samples, depending on local conditions and known subsurface geology. Soil samples may be taken from the surface or shallow pits. Deeper samples are obtained using a back hoe or augers, either hand operated or mobile drilling rigs. The latter are the most frequently used and potentially the most expensive. They are also used to obtain deep samples in marine environments. Sediment samples are important when streams or lakes are potentially contaminated. These samples are generally easy to obtain using scoops, specialized coring devices, and specially constructed grab samplers.

Air sampling is frequently part of a PSI. The technique is usually a real time method that not only screens for any existing contamination, but also establishes criteria for worker safety. Worker safety is an important consideration in assessing contamination discovered during construction activities. Direct reading instruments, such as photoionization detectors and soil gas probes, are used to take air samples.

Selection of analytical methods and proper sample handling techniques are critical to a successful PSI. Laboratory analysis must be performed by Ecology-certified laboratories. A variety of laboratory analyses are available. Most methods are selected based on the specific objective of the PSI, although many are dictated by specific provisions of regulatory documents. Improper or incomplete sample or analysis planning may invalidate sampling results or make the results legally indefensible. Proper handling of samples is also crucial to obtaining usable and defensible data, and includes selection of correct sample containers, proper storage and transportation, consideration of holding times, and following strict chain-of-custody procedures.

(b) Reports

An ISA sufficiently detailed to identify the possibility of contamination will normally be required before a PSI is undertaken. An abbreviated ISA can be conducted if the site history is known or obvious and the suspected contaminants are well understood. The report prepared for a PSI depends on the nature of the project and the findings of the ISA. For instance, in the case of a service station, information contained in an ISA should be referenced and not repeated in a PSI report.

Regions reviewing PSI reports prepared by WSDOT ESO personnel or an environmental contractor should expect to find the following information:

- Discussion of the physical environment and its relationship to the potential types of contamination, its influence on where contamination may be found, and how it impacts the extent of contamination migration.
- Selection of sampling techniques, the rationale for the type of sampling, and a sampling plan.
- Discussion of the laboratory analysis performed.
- Conclusions and recommendations, which should include identification of any contamination found, its extent, impact on human health and the environment, and a remediation strategy.

Since a PSI involves limited field sampling, the conclusions and remediation strategy recommendations are not an "end all." The contamination may require extensive sampling, and perhaps long-term monitoring. The remedial strategy formulated at this time can serve as no more than a first guess. However, Regional Offices should expect sufficient detail to make a property acquisition or design modification decision from the information contained in a PSI report.

(6) Detailed Site Investigation (DSI)

A DSI generally includes conducting a thorough investigation of a site and preparing a remediation plan. The DSI may be prepared independently or in support of a discipline study being done for environmental documentation, and may also be needed during the construction phase (see [Section 510](#)). A DSI can be extensive, time consuming, and expensive. Consequently, in WSDOT a DSI is conducted only when the following conditions are met:

- The existence of hazardous materials on the project site has been confirmed and the PSI indicates the need for more detailed sampling and analysis, and
- A decision has been made to proceed with the property acquisition, and
- A site analysis and cleanup is not being performed by a responsible party
- other than WSDOT.

Or:

- Hazardous material conditions are discovered in the project right of way during construction, and
- There are no alternative construction options.

A DSI includes detailed sampling of the site, analysis of remedial alternatives with estimates of the cleanup costs, and recommendations of which remediation type to use. Generally, WSDOT does not have the resources to conduct a DSI, although there may be circumstances in which the department finds it beneficial to commit the resources to conduct an in-house DSI project. Consult the ESO for assistance in meeting DSI requirements. The ESO has several on-call environmental contractors specifically to conduct DSI and remediation projects.

Field work and laboratory analysis are the major components of a DSI and consequently account for most of the study time and costs. A DSI site characterization provides a sufficiently detailed understanding of the site to allow the subsequent formulation and evaluation of remedial alternatives. DSIs may take months to several years to complete and costs may exceed half a million dollars.

(7) Requirements for Specific Hazardous Materials

(a) Leaking Underground Storage Tanks (LUSTs)

Petroleum is the most common form of hazardous materials contamination encountered by WSDOT. Although petroleum is not currently defined as a hazardous substance under CERCLA, it is under MTCA, and its occurrence is so widespread that numerous state and federal regulations and guidelines have been promulgated to deal with its prevention and cleanup.

The most frequently occurring cause of petroleum contamination is leaking underground storage tanks (LUSTs). LUSTs are commonly found at gas and service stations, along main roadways, arterials, and at intersections. Private under-ground storage tanks (USTs) such as home heating oil tanks in rural and residential areas and farm fuel tanks are also common and are not registered with Ecology. Consequently, identification prior to property acquisition is a priority for WSDOT.

The liability WSDOT can incur from acquiring even a small piece of property contaminated with petroleum makes thorough site assessments necessary. Regions are expected to conduct at least an ISA for all UST sites or property where petroleum products were handled and where complete or partial acquisition is planned.

A full ISA is usually not necessary for service station sites, because there is already cause to suspect contamination. A PSI should be conducted if potential contamination cannot be reasonably ruled out. There are no fixed rules on when a PSI must be conducted. Keep in mind that the absence of visual signs does not mean a tank has not leaked. It is not unreasonable to expect some level of PSI for all petroleum sites considered for acquisition.

Unless the petroleum contamination is unusually widespread, or groundwater is contaminated, the cost of remediating a known LUST site or other petroleum site is often a reasonable acquisition risk. In such cases, consult the Attorney General's Office for special provisions to include in purchase agreements.

Until recently, excavation and land disposal of petroleum soils was the norm. Fewer landfills and higher dumping costs, as well as RCRA policies and liability issues, now make land disposal the least desirable method. USEPA encourages treatment remediation as the preferred course of action. Treatment at the site is preferred, because of the added cost and liability in transporting contaminated soil away from the site.

Depending on the type of release and the geologic conditions, petroleum contamination may be managed cost effectively by on-site bioremediation, soil venting, or thermal destruction. For small volumes, off-site treatment may be appropriate. Several companies in the state now accept petroleum-contaminated waste, which is thermally remediated or incorporated into asphalt or concrete. The cost for this type of disposal is generally less than landfill disposal fees. Ecology's *Guidance for Remediation of Petroleum-Contaminated Soils* (November 1995) provides additional information. The document is online at Ecology's web site:

 <http://www.ecy.wa.gov/>

Click on Publications/Forms, then type in name of document into the text box for entering a search phrase.

Or by direct link:

 <http://www.ecy.wa.gov/biblio/9130.html>

(b) Asbestos

Asbestos is a naturally occurring fibrous mineral that was used extensively in residential and commercial buildings. It is rarely used in new construction today. Asbestos was widely used as a commercial product because it is non-combustible, resistant to corrosion, and has a high tensile strength and low electrical conductivity. In residential and commercial buildings constructed before 1981, asbestos is often contained in thermal system insulation, various decorative spray-on texturing and fire-proofing, floor coverings, siding, adhesives, roofing materials, and thousands of other building materials and/or applications.

There are several forms of asbestos, such as actinolite, amphibole, amosite, tremolite, chrysotile, crocidolite, or anthrophyllite. Building materials containing at least one percent asbestos as determined by polarized light microscopy are considered to be a regulated hazardous material. The *Method for Determination of Asbestos in Bulk Samples* is contained in Appendix A of Subpart F in 40 CFR Part 763.

Asbestos is a known carcinogen and contributor to lung disease. Federal, state, and local regulations govern all aspects of asbestos. Management, removal, and disposal of asbestos requires special training, handling, and permitting. Asbestos regulations are enforced by local air pollution control authorities, Ecology, and most specifically by Labor and Industries (WAC 296-62, Part I-1). Federal guidance about asbestos is found in 40 CFR 61 Subpart M, National Emissions Standards for Asbestos.

In WSDOT projects, asbestos is most commonly found in pre-1985 buildings, and various underground piping and conduits. Demolition of structures or excavation of buried utilities can expose workers and the public to asbestos.

Project Design Considerations – The following considerations shall apply during the design phase of any project that will include demolition or renovation:

- Any project work involving asbestos must be completed by trained and certified individuals.
- All buildings constructed before 1985 should be presumed to contain asbestos unless testing and inspection reveals otherwise.
- If the presence of asbestos is suspected during the ISA or at any point during project design, a survey by a certified asbestos inspector shall be conducted.
- The abatement plan or management plan shall be completed by a certified AHERA Project Designer.

Dependent upon availability, WSDOT's ESO Hazardous Materials Program has an AHERA accredited inspector and can conduct asbestos surveys. Detailed information and instruction for dealing with asbestos is located in the WSDOT *Asbestos Abatement Manual* (M-27-80).

(c) Lead Paint

Lead-based paint poses risks to environmental health and worker safety when disturbed for maintenance, renovation, and demolition of structures including bridges and buildings. Environmental documentation prior to any project should ascertain the existence of lead-based paint and determine if that paint will be disturbed.

Testing for lead-based paint must be conducted by trained and certified personnel or contractors. Testing should be completed as early in the design phase as possible and certainly before advertising a project when the contract includes building demolition or renovation. Lead removal can be included in the primary contract or in a separate contract. WSDOT's ESO Hazardous Materials Program can provide project managers and Real Estate Services with contract specifications and other contracting assistance. See [Section 447.02](#) for statutes and regulations applicable to lead paint.

Information covering identification, disposal procedures, regulations, and health hazards is available on Ecology's web page:

 <http://www.ecy.wa.gov/>

Click on Programs, then Hazardous Waste and Toxics Reduction, then Demolition Debris Information and then Lead Wastes.

Or by direct link:

 <http://www.ecy.wa.gov/programs/hwtr/demodebris/pages2/leadmenu.html>

Facilities – Especially in pre 1980 buildings, buildings scheduled for demolition should be tested for lead-based paints before beginning work.

Bridges – Almost all WSDOT and county steel structure bridges contain large concentrations of lead paint and other regulated heavy metals, such as zinc. To comply with applicable air, water, and safety and health regulations, these hazardous materials pose significant management challenges as related to construction and maintenance. Because of the rapidly changing policy concerning painting, any questions concerning bridge painting should be directed to the ESO Hazardous Materials Program Manager.

Exposure of hazardous materials to the environment and personnel will occur during bridge paint removal and surface preparation, through contact with spent abrasives, old paint, corrosion products, dust, grease, bird feces, and wastewater. Likely exposure pollutants include lead, chromium, cadmium, arsenic, barium, mercury, selenium, and silver. Even though contractors perform the majority of bridge construction and maintenance, WSDOT is required to be diligent for managing these hazardous materials from “cradle to grave.”

Disposal of Lead-Based Paint and Lead-Contaminated Wastes – WSDOT, as a generator of project hazardous materials, is responsible for overseeing and managing the disposal of project wastes. Lead-based paint poses disposal challenges due to the toxicity of the metal. Disposal options vary depending on the toxicity and lead leachability of the waste (lead TCLP). For example, lead concentrations in the waste materials greater than 5 mg/kg are required to be disposed of at a certified landfill. Lead concentrations less than 5 mg/kg can be disposed of at a non-certified landfill. The difference in the disposal cost is significant when comparing landfills.

Leachability of the lead is reduced when contractors or maintenance personnel use binders such as Blastox in the removal of lead-based paints.

(8) Disposal Procedures for Waste from Investigative Sampling

This section summarizes the procedures to be followed for management of investigative sampling wastes generated during a PSI or DSI. Disposal of sampling wastes is regulated by numerous federal, state, or local laws and procedures, depending on what the waste is determined to contain. It is the responsibility of the region in which the sampling was conducted to store and dispose of the sampling waste. The ESO will provide the laboratory characterization reports and recommendations for legally disposing of sampling waste.

Sampling wastes may include drilling mud, bore cuttings, purge water from wells, soil, other materials from the collection of samples, and solutions used to decontaminate equipment. Under certain conditions, such sampling wastes may be disposed of on site. The hazardous material specialist or site manager conducting the sampling is responsible for complying with laws that govern on-site waste disposal.

Because of potential public concern and the liability associated with leaving sampling waste in the public right of way or at sites accessed with temporary easements, Regional Offices must remove sampling containers from such locations within 24 hours. Sampling waste containers are stored at facilities owned or operated by WSDOT. The ESO recommends that each region establish a limited number of facilities where sampling waste may be stored. This eases the burden of disposal if the sampling waste is determined to be hazardous material as defined by RCRA.

Labeling is of prime importance when dealing with known or suspected contaminated wastes and materials. All containers must have a legible label with the correct information on that label. See the USDOT labeling regulations (49 CFR 173.2).

(a) Non-hazardous Waste Disposal

Most wastes generated by WSDOT are not hazardous and can be properly disposed of in landfills, pit sites, or back onto the property from which they were obtained. Also, sampling waste is not a hazardous waste until positive evidence, based on test results, confirms its characteristics. Consequently, there is no requirement to obtain USEPA/State Site Identification Numbers or prepare shipping manifests to transport sampling waste.

Sampling waste determined not to be hazardous can be disposed of in several ways. Waste without any contaminants can be returned to the site of origin or placed in a WSDOT pit site. Problem wastes, notably petroleum-contaminated soil and asbestos, may legally be disposed of in a permitted landfill or with one of the many permitted business that accept such waste. Regional Offices are responsible for determining the acceptability of problem wastes for treatment or disposal in their region. The ESO will provide updated information on permitted businesses, their location, fees, and restrictions. Aqueous waste may be poured onto the ground, if contaminant free, or disposed of through a Publicly Owned Treatment Works (POTW). Regions are responsible for complying with the restrictions of their POTW.

(b) Hazardous Waste Disposal

Sampling waste determined to be hazardous must be disposed of by a WSDOT-certified hazardous waste transport contractor. Regional Offices must obtain a USEPA/State Site Identification Number before offering hazardous waste for transport. A few exceptions are permitted for small quantity generators as described in WAC 173-303-070(8). See [Section 447.06](#) for information on obtaining identification numbers. A separate number is necessary for each site from which hazardous waste is shipped. Since Ecology requires annual reports, limiting the number of sites for storing potential hazardous sampling waste will reduce documentation. To ship hazardous wastes, Regional Offices must comply with all administrative and substantive requirements for RCRA wastes in Washington State, including shipping manifests, packaging and transport requirements, and record keeping.

(9) **Right-of-Entry Procedures**

One of the major issues for conducting environmental site investigations is access to private property for the purpose of sampling. The issue consists of determining whether access is required, then following appropriate guidelines for gaining access. RCW 47.01.170 allows only visual inspections of the property. Washington has no statute allowing collection of samples without the owner's permission. Permission of the property owner is necessary when access is required to conduct invasive testing for a PSI. A unique condition exists when a private property owner refuses a valid WSDOT request for entry. In either case, the assistance of the office of the Attorney General is required.

(a) **Reasons for Access**

The first step is to determine whether access to potential contaminated property is required to conduct a PSI. Documentation that supports WSDOT's need to access a particular property is essential and will normally be needed if seeking a court order. The recommended form of documentation is an ISA. Following are several objectives that would require WSDOT to enter upon private property.

- ***Routine engineering and surveying*** – Routine access for purposes such as project design, estimating cost, or setting stakes is permitted under RCW 47.01.170. To demonstrate respect for private property rights and to protect employees from unknown dangers, oral permission from the property owner will be obtained whenever possible. Invasive engineering or testing requires a signed right of entry, which can be obtained through the Region Real Estate Services (RES) section.
- ***Avoiding MTCA strict liability exposure*** – WSDOT becomes liable for cleanup costs as a subsequent owner even though it did not cause the contamination. WSDOT policy is to sample property that is suspected of being contaminated prior to purchase or as part of the Real Estate Services negotiation.
- ***Detecting hazardous substances*** – In order to establish an innocent landowner defense, WSDOT must exercise due care and reasonable precaution (CERCLA, 42 USC 9601 and 9607). Eminent domain condemnation does not protect WSDOT against a third party claim unless adequate investigation, due care, and reasonable precautions have been established. To qualify for this defense, WSDOT must demonstrate that it:
 - Acquired the property after contamination
 - Exercised due care with respect to hazardous substances involved
 - Took reasonable precautions against the consequences of pollution
- ***Detecting petroleum product contamination and underground storage tanks for RCRA compliance*** – Sites must be investigated to detect petroleum contamination due to liability imposed by MTCA, and the need to remove tanks. This is one of the principal problems encountered by WSDOT and one that has caused the most cleanup liability and costs.
- ***Complying with federal, state and local laws*** – Examination of sites is required to comply with numerous environmental, natural resource, agricultural, and historic laws. These include NEPA, 4(f), and laws relating to clean air, historic preservation, relocation, wetlands, threatened species,

and cultural/ archaeological artifacts. Access to the property for inspection must be obtained prior to property acquisition in order to accomplish the letter or intent of these laws.

- ***Determining project location and scheduling*** – WSDOT must decide whether the costs and delays of contamination cleanup warrant selecting an alternative route. Otherwise WSDOT could be mired in review and investigation procedures that delay construction for years or even prevent proceeding with the project.
- ***Determining construction site conditions*** – WSDOT must know the type of contamination and other conditions likely to be encountered during construction and to which its contractors may be exposed. WSDOT and its contractors found to have caused or contributed to the release or threatened release of a hazardous substance can be held liable for that contamination.
- ***Appraising property*** – Access is required for appraisal purposes. Contamination affects the valuation of property and methods selected for cleanup. WSDOT may act as a contracting or negotiating agent for current owners in some situations. In other cases, the cost of cleanup should be deducted from acquisition cost or money held in escrow for cleanup.

(b) Pre-Access Requirements

The following steps should be taken before requesting a right-of-entry to conduct a PSI:

- ***Conduct an environmental audit*** – Reviewing public records may reveal that other work was conducted and that regulatory agencies are involved. There is no need for WSDOT to repeat a site investigation. This should have been accomplished in the ISA.
- ***Determine that the purpose of the proposed site inspection is clearly identified*** – Legitimate purposes include acquiring property for a transportation project, remediating contamination on the property, project planning, or preparing an Environmental Impact Statement.

(c) Obtaining Right-of-Entry

Procedures for obtaining a right-of-entry are as follows:

- Rights-of-entry are obtained through the Region RES section, using the procedures in the Right of Way Manual (M26-01) Chapter 6, Easements and Permits. RES will obtain title evidence and negotiate and process payments for damages. Although condemnation is permissible under the statute, WSDOT and the Transportation Commission have taken the position that WSDOT will not condemn property to acquire rights of entry for environmental testing.
- The Region RES section will need the details of the area to be investigated, what materials are expected to be found, and how long it is going to take. If long term use of the property is needed, RES will determine and negotiate a fair market rental rate to be paid. It is often helpful for the engineer to attend the meeting with the property owner(s) to clarify issues that arise. This is an

opportunity for WSDOT to make reciprocal agreements to share the results of any testing on the site.

- Should the owner(s) refuse to allow entry, and it is essential to continue investigation, the Region RES personnel will enlist the assistance of the office of the Attorney General (AG) to obtain a court order. An assistant AG will need an affidavit of negotiation, setting out WSDOT's attempts to obtain permission from the owner and the owner's refusal. Typically, this consists of the RES agent's diary and any engineering notes to the file.

(10) Real Estate and Property Management

Real property activities involve hazardous material management issues in two major areas: property acquisition and property management. WSDOT's Real Estate Services plays a major role and is responsible for helping to coordinate a wide variety of hazardous material procedures.

(a) Property Acquisition

The main objective for hazardous materials management in property acquisition is to avoid or minimize liability. Once title to a contaminated site is held by the state, it may be too late to resolve legal problems related to acquisition. Certain protective measures in the acquisition process are required very early in the program. Real Estate Services role includes the following:

- Preparing and negotiating right-of-entry documentation so site testing can proceed in a timely manner.
- Analyzing test results from a fiscal standpoint, and coordinating applicable value estimates to make sure appropriate compensation is offered for property rights acquired.
- Including indemnification language in acquisition documents to make sure WSDOT will not be held liable for any claims related to site cleanup that are not directly attributable to the state's provisions of title.
- Applying appropriate indemnification deposit procedures that withhold compensation to a property owner, so WSDOT does not bear the financial burden for site cleanup when latent contamination is discovered.
- Coordinating asbestos testing for all habitable dwellings or business buildings that are acquired.

(b) Property Management

Although property management presents unique considerations, the ultimate objective is the same as other WSDOT activities, which is to minimize or eliminate liability for hazardous materials. Sites under property management usually were acquired as early possession of a right of way. The property may remain vacant or be leased until highway construction begins. Often, property is made available for sale due to changes in highway projects or by becoming "excess" after a project is completed (see [Section 530](#)).

When WSDOT leases property for any reason, it remains liable for contamination caused by the lessee. However, a number of steps should be taken to minimize liability under lease arrangements.

Like any landlord, WSDOT screens all potential tenants to ensure they will be environmentally responsible during occupancy of the property. At a minimum, tenants should be required to describe their type of business and any proposed hazardous waste and hazardous materials handling practices. Property managers should routinely check each prospective tenant's environmental reputation and compliance record.

Although as the property owner WSDOT will not be released from MTCA and CERCLA liability, including indemnification provisions in the lease will protect WSDOT from inheriting responsibility for environmental damages caused by the tenant. This will ensure that WSDOT does not bear the burden of cleanup.

WSDOT regularly monitors a tenant's activities to ensure commitment to maintaining a clean site. A baseline environmental assessment is recommended as soon as a tenant occupies a property. Periodic spot inspections, provided for in the lease, should be conducted. Prior approval must be obtained from WSDOT before any USTs or sumps are installed or removed. Notification before tenants conduct any subsurface investigations should be required, and copies of all environmental reports and inspections should be provided to WSDOT. Before terminating a lease, the property is thoroughly evaluated to ensure hazardous materials, drums, and tanks have been properly removed and disposed.

(11) Contract Specifications for Contractor Spill Prevention Plans

Standard Specification #1-07.15(1) requires contractors to complete a Spill Prevention, Control, and Countermeasures (SPCC) Plan before beginning any WSDOT project. The WSDOT ESO Hazardous Materials Program has developed a number of documents and guidance materials to assist contractors in developing an SPCC Plan. These include an example site map illustrating the level of detail and the type of information required in an SPCC Plan submitted to WSDOT and an example SPCC Plan that meets the minimum requirements of the Standard Specification. Guidance documents are also available for WSDOT staff who review SPCC Plans. These documents are available via WSDOT's home page:



<http://www.wsdot.wa.gov/>

Click on Site Index, then E, then Environmental Services Office, Hazardous Materials, SPCC Plan Guidance & Training, and then Documents and Guidance Materials.

Or by direct link:



http://www.wsdot.wa.gov/environment/hazmat/haz_spcc.htm

447.06 Permits and Approvals

(1) Hazardous Waste Tracking Number (Ecology Form 2)

WSDOT is responsible for obtaining all required permits and one-time-only or regular disposal USEPA Identification Numbers. A separate identification number (RCRA Site Identification Number) is required for each project. The RCRA Site Identification Number (also known as a WAD number) must accompany wastes regulated under the Dangerous Waste Regulations (WAC 173-303) during generation, transportation, storage, and disposal.

The WSDOT contractor must be given this Ecology RCRA Site Identification Number before any hazardous waste may be manifested and transported. The Project Office applies for and maintains the RCRA number for each project.

For more information and an application (Form 2) for a RCRA Site Identification Number, visit the Ecology home page:

 <http://www.ecy.wa.gov/>

Click on Programs, then Hazardous Waste & Toxics Reduction, then Hazardous Waste Management Requirements, then Hazardous Waste Regulatory Information & Assistance, then Hazardous Waste ID# and Annual Reporting, then Form 2.

Or by direct link:

 http://www.ecy.wa.gov/programs/hwtr/reg_comp_guide/pages/hazwaste_id.html

Once the project is completed and the hazardous waste is properly receipted at the approved disposal site, the RCRA number must be canceled by submitting another Ecology Form 2. Unless cancelled, Ecology will require annual reports on all active Site RCRA numbers.

Regional Offices are responsible for ensuring that hazardous wastes are properly disposed of, and should maintain permanent copies of all records for waste characterization tests, permits, manifests, and RCRA number applications.

To find out whether a RCRA number is required for a specific waste, contact the WSDOT ESO Hazardous Materials Program.

(2) Bridge Removal Permits

Several permits are required for bridge removal, most commonly a Hydraulic Project Approval, Shorelines permit, Endangered Species Act (ESA) concurrence, and Temporary Water Quality Modification. See [Section 431.06](#) and [Section 436.06](#) for details. Permit requirements must be determined on a project-specific basis.

(3) Soil Boring, Well Drilling & Well Decommissioning Licenses/Notifications

A Water Well Construction and Operator's License is required for all drilling activities, including developing water wells, monitoring wells, and biotech soil borings. Ecology also requires notification prior to constructing or decommissioning water wells. For further information contact the WSDOT ESO Hazardous Materials Program or see Ecology's web site:

 <http://www.ecy.wa.gov/>

Click on Programs, Water Resources, then Well Construction and Licensing.

Or by direct link:

 <http://www.ecy.wa.gov/programs/wr/wells/wellhome.html>

447.07 Non-Road Project Requirements

Ferry terminals may be located in areas containing contaminated sediments. If dredging is required and the sediments are not determined to be suitable for open-water disposal, sediments are disposed of at an upland disposal site.

Additionally, extracted creosote timber piles may require special disposal, though Ecology does not consider them a hazardous waste. Pre-demolition or construction coordination with local landfills is recommended.

No special requirements have been identified for aviation or rail projects.

447.08 Exhibits

Exhibit 447-1 – Hazardous Waste Discovery Process

Exhibit 447-2 – Decision Process for Preparing a Hazardous Materials Discipline Study

Exhibit 447-3 – Documentation File Content Guidelines

Hazardous Waste Discovery Process For Transportation Projects

PROGRAM PLANNING AND ENGINEERING PROCESS

Program Planning

Project Definition and Planning

Develop and Analyze Preferred
Alternative

Select and Refine Preferred Alternative

Refine Project Design and Begin
Property Acquisition

Finalize Design Report

Refine and Finalize Plans,
Specifications, and Estimates

Construction

HAZARDOUS MATERIALS DISCOVERY PROCESS

Hazardous Materials
GIS Data Screening
(Environmental Workbench)

Corridor Screening Level Study

Develop Discipline Study
(including mitigation cost estimates)

Perform Sampling if Necessary and
Finalize Discipline Study

Prepare Draft EIS
(Refine Mitigation Cost Estimates)

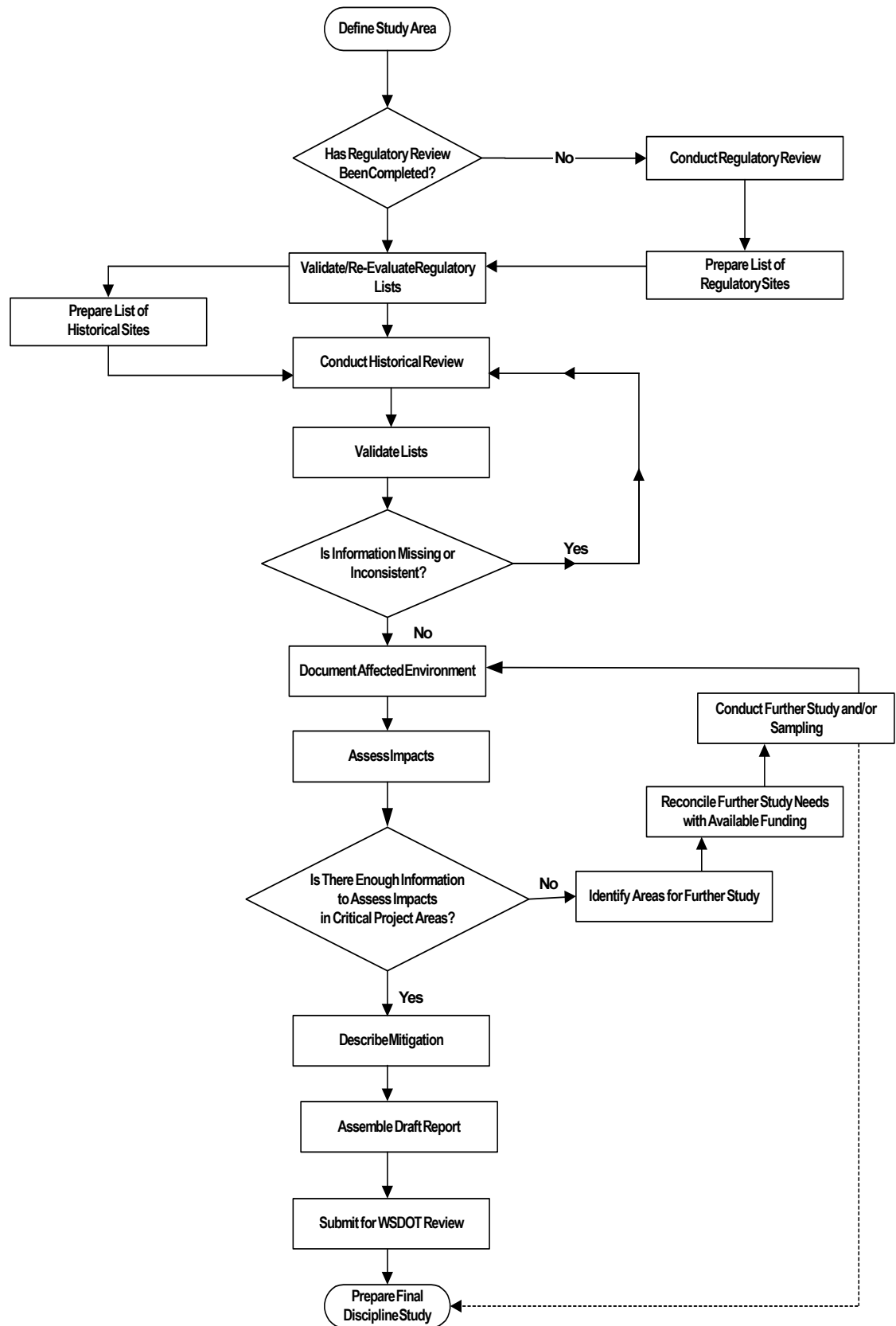
Finalize EIS

Support Development of Hazardous
Materials Management Specifications as
Needed

Conduct Any Necessary Pre-construction
Clean-up

Clean-up During Construction and
Hazardous Waste Disposal

Decision Process for Preparing A Hazardous Materials Discipline Study



Documentation File Content Guidelines

Minimum Essential Documents for Hazardous Waste Assessments/Investigations

	ISA		PSI/DSI	
	Required	Recommended	Required	Recommended
DOCUMENTATION				
Physical				
USGS Topographic Map	✓			✓
Aerial photographs		✓		✓
Site photographs	✓		✓	
Soil Conservation map-extracts		✓		✓
Site map	✓		✓	
Other geology/hydrogeologic maps or reports		✓		✓
Records				
Temporary easements		✓	✓	
Interview records and memorandums		✓		✓
Environmental Reports/Permits - copies or excerpts		✓		✓
Land use/planning/zoning/Health Department permits and reports	✓			✓
Title searches	✓		✓	
State/Federal Environmental registers - memorandum of use	✓			✓
Local records - identity and memorandum of use		✓		
Historical records - identity and memorandum of use		✓		
Investigative				
Sampling plans/site maps			✓	
Field records/notes			✓	
Laboratory analysis and custody records			✓	
References				✓
Contractor reports and correspondence				✓
Correspondence				
WSDOT	✓		✓	
Regulatory agencies	✓		✓	
Court orders/decrees/consent agreements		✓		✓

